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### **REMARKS**

This is in response to the Office Action mailed November 15, 2004.  
Reconsideration is requested.

#### **Disposition of Claims.**

Claims 1-39 are pending in the application and all are at issue.

#### **Claim Rejection - 35 U.S.C. § 102(b).**

Claims 1, 4-11 and 36 were rejected under 35 U.S.C. § 102(b) as being anticipated by United States Patent 5,191,967 issued to Woltjer et al. (hereinafter referred to as "Woltjer"). Claims 12-14, 17, 20-22, 27-30, 33 and 37-39 were rejected under 35 U.S.C. § 102(b) as being anticipated by United States Patent 5,862,907 issued to Taylor (hereinafter referred to as "Taylor").

Amended claim 1 is directed to an accumulation conveyor system including an accumulation assembly and a transport line. The accumulation assembly accumulates a plurality of articles into a slug of articles having a nominal length. The transport line is made up of a plurality of tandem transport conveyors downstream of the accumulation conveyor. Individual slugs are discharged from the accumulation assembly and accumulated with the transport conveyors. The transport conveyors have lengths that are generally no longer than the nominal lengths. Amended claim 36 is a method claim that corresponds to system claim 1.

In Woltjer, item 18 is an induct section where suitable spaces are inserted between adjacent cartons as required for proper sortation in a sortation section 20 (column 3, lines 41-43). While induct section 18 is not described in detail, it appears in Fig. 1 to include a long accumulation section and a series of gapping belts downstream of the accumulation section. If the accumulation section is applied to the tandem transport conveyors claim element, it does not meet the requirement of the transport conveyors having lengths that are generally no longer than the nominal length of the slug of articles accumulated by the accumulation assembly. If, instead, the gapping belts are applied to the tandem transport conveyors claim element, the gapping belts of induct section 18 do not accumulate slugs as

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required by the claims. Accordingly, it is submitted that Woltjer does not meet each and every requirement of independent claims 1 and 36 which is required in order to establish anticipation under 35 U.S.C. § 102(b). Claims 4-11 are dependent on claim 1. Accordingly, it is submitted that the rejection has been overcome. Withdrawal is requested.

Amended claim 12 is directed to an accumulation apparatus having a conveying surface divided into a plurality of conveying sections, the conveying sections defining tandem accumulation zones. A control monitors articles on the conveying surface and operates the conveying sections to accumulate articles in the zones. The control operates the conveying sections after the accumulation mode with articles accumulated in the zones. Slugs are formed by reducing gaps between the articles. Claim 37 is a method claim corresponding to the apparatus claim of claim 12. Taylor is capable of operating in one of two modes, namely, a singulation mode and a slug mode (column 2, line 1). Whether operating in the singulation mode or in the slug mode, Taylor fails to disclose, teach or suggest reducing gaps between the articles after the articles are accumulated in the zones. This can best be understood by comparing Fig. 12 with Figs. 13 and 15 of Taylor. Fig. 12 is a diagrammatic representation of the accumulating conveyor wherein packages P1, P2 and P3 are accumulated (column 5, lines 40-44). Fig. 13 is a diagrammatic representation of the accumulating conveyor of Fig. 12 wherein package P1 is being released with the control device set to the singulation mode (column 5, lines 45-48). It can be seen that, rather than reducing gaps between articles after the articles are accumulated in the zones, Taylor teaches in the singulation mode that the gaps are *increased* between the articles. Accordingly, Taylor teaches away from the invention as defined in amended claims 12 and 37. Fig. 15 is a diagrammatic representation of the accumulating conveyor of Fig. 12 wherein the packages are being released while the control device is in the slug mode (column 5, lines 51-53). A comparison of Figs. 12 and 15 illustrates that, in the slug mode, the gaps between articles are generally maintained and not reduced. Indeed, Taylor teaches that the zones change in the slug mode, for practical purposes, from the stopped state to the running state simultaneously (column 13, lines 54-56). This would preclude a reduction in gaps.

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Taylor is an example of a zero-line-pressure accumulation conveyor as discussed in the "Background of the Invention" of the present application. As set forth therein in paragraph 0004, gaps are introduced between the articles during non-contact accumulation, especially where a wide variety of article sizes are being handled by the conveyor system. The gaps reduce the throughput of the system because they reduce the number of articles that may be handled by each given length of conveyor at any given time. This is overcome by the invention as defined in independent claims 12 and 37. It is submitted that Taylor fails to disclose, teach or suggest the invention as defined in amended claims 12 and 37. Accordingly, it is submitted that the rejection has been overcome. Withdrawal is requested.

Independent claim 20 is directed to an accumulation conveyor apparatus including a conveyor surface divided into a plurality of conveying sections, the conveying sections defining tandem accumulation zones. A control monitors articles on the conveying surface and operates the conveying sections to accumulate articles in the zones. The control operates the conveying sections to form a slug by reducing gaps between articles in sequence from an upstream gap to downstream gaps. Claim 38 is a method claim that corresponds with apparatus claim 20. As previously observed, once Taylor accumulates articles in its zones, it does not reduce gaps between the articles, much less reducing gaps between articles in sequence from upstream gaps to downstream gaps. This is best illustrated in Figs. 7a-7f in the present application in which a slug "grows" from an upstream end of the accumulation conveyor apparatus to the downstream end by reducing gaps between articles in sequence from upstream gaps to downstream gaps. It is submitted that Taylor fails to disclose, teach or suggest the invention as defined in independent claims 20 and 38. Accordingly, the rejection has been overcome. Withdrawal is requested.

Claim 27 is directed to the accumulation conveyor apparatus having a conveying surface divided into a plurality of conveying sections, the conveying sections defining tandem conveying zones. Article sensors are associated with the conveying sections and are positioned at interfaces of the conveying sections. A control is provided and monitors articles on the conveying surface and operates the conveying sections to accumulate articles in the zones. The control terminates operation of a conveying section when the associated article sensor senses a trailing portion of an article at that conveying section and operates with articles accumulated in the zones to form a slug by reducing gaps between articles. In

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addition to the reasons set forth above, it is submitted that Taylor does not disclose, teach or suggest terminating operation of a conveying section when the associated article sensor senses a trailing portion of an article at that conveying section. Taylor includes accumulation modules 20, each having a sensor 28 disposed on one side facing the conveying surface. As is clearly illustrated in Figs. 9-17, the accumulation modules 20 and, hence, the sensor 28 are positioned to terminate operation of a conveying section when it senses a *leading* portion of an article at that conveying section. Accordingly, it is submitted that Taylor teaches away from the invention as defined in claim 27 and corresponding method claim 39. Accordingly, the rejection has been overcome. Withdrawal is requested.

Issuance of a Notice of Allowance is earnestly solicited. If Examiner Crawford has any questions or reservations, it is requested that Examiner Crawford call the undersigned attorney.


Respectfully submitted,

TED W. HAAN and WYNN M. PELAK

By: Van Dyke, Gardner, Linn & Burkhardt, LLP

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Frederick S. Burkhardt, Registration No. 29 288  
2851 Charlevoix Drive, S.E., Suite 207  
Post Office Box 888695  
Grand Rapids, Michigan 49588-8695  
(616) 988-4104